

# The relevance of FAIR data management, usage and sharing in policy- making processes



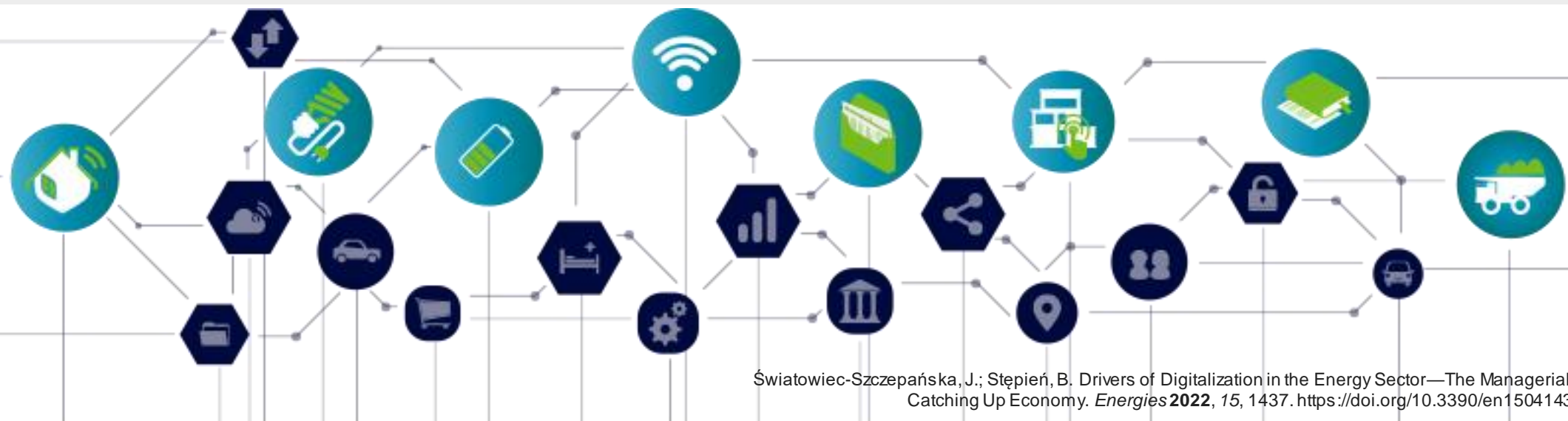
# Energy in the EU's priorities

The **main goals** of the **EU energy policy** are to reduce the environmental impact of its production and transmission while maintaining the security and stability of the system, in order to serve economic and social development. The objective is to create an integrated, secure, and stable European energy market (*Article 194 of the Treaty on the Functioning of the European Union*), with the main challenges being:

**decarbonizing** the economy and reducing CO2 emissions

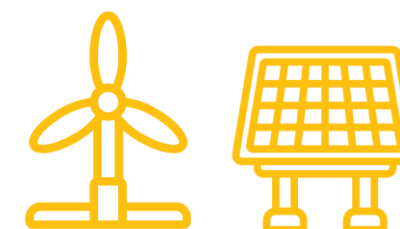
**diversifying** Europe's energy sources, including reducing dependence on energy imports

**integration and free movement** of energy within the EU



# Key targets for 2030

- At least 40% cuts in greenhouse gas emissions (from 1990 levels)
- At least 32% share for renewable energy
- At least 32.5% improvement in energy efficiency

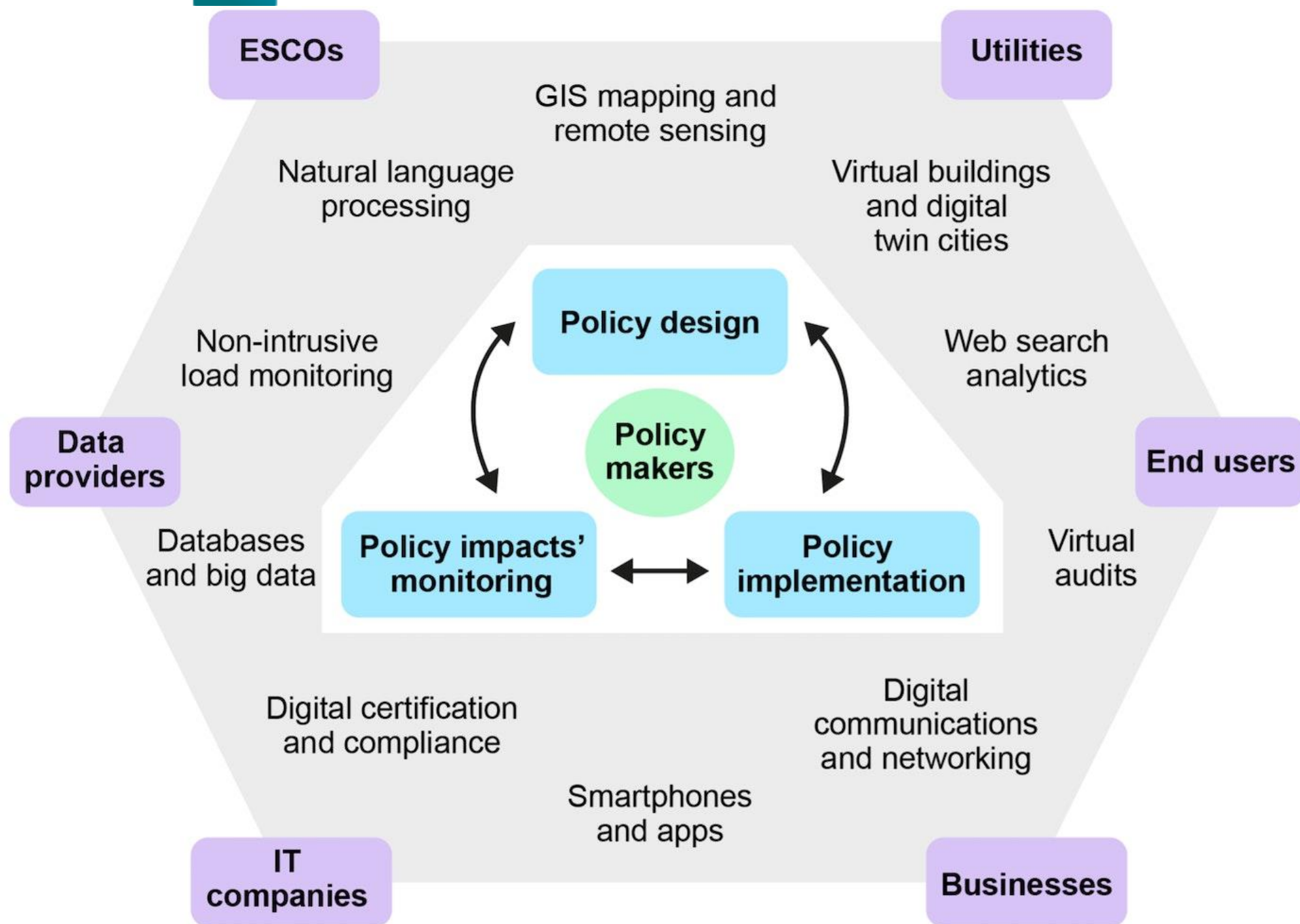


*„The implementation of EU energy policy objectives depends on cooperation between Member States, and, as such, should contribute to greater transparency of the entire market by eliminating technical and regulatory barriers”*





# Energy efficiency policy cycle



# Why we need **data in energy policy**?

- To respond to the need for energy statistics.
- To support each country's Clean Energy Transitions.
- To ensure well-informed political decision-making by detailed data on energy end use.
- To respond to the need for detailed energy data and related activity data.
- To learn from each other, sharing tools and new ideas, developing new approaches.
- **To design, monitor and evaluate policies**





TOWARDS A FAIR AND OPEN DATA  
ECOSYSTEM IN THE LOW-CARBON  
ENERGY RESEARCH COMMUNITY

# Thank you for your attention



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 883823.

PANEL: UTILIZING FAIR AND OPEN DATA IN ENERGY POLICY DOMAIN

**Awareness about FAIR in content of FAIR data management, usage and sharing in  
policy-making processes - *survey results***

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**GiG** Research  
Institute







## ASSUMPTIONS AND PURPOSE OF THE SURVEY DEVELOPMENT

The Horizon 2020 EERAdataproject develops, explores and tests a FAIR and open data ecosystem in the field of low-carbon energy for a transparent and integrated energy data management with useful metadata information and quality assurance as a basis for the society to choose, monitor and implement sustainable transition pathways.

This challenge addresses stakeholders’ needs in the rapidly changing energy field, including the availability of relevant data and information. To meet these aims, and to improve the data FAIRification we gathered the views and opinions of policymakers / data users and producers on how energy data is found and processed in policies and how it can be improved.





## CHALLENGES WITH REGARD TO THE IMPORTANCE OF FAIR DATA IN THE POLICY-MAKING PROCESS

The results of the survey allows to assess the Respondents' knowledge of FAIRdata and their involvement in data FAIRification process.



Analysis of the received responses enabled the identification of main barriers and challenges faced by data users and managers.





## QUESTIONARLY STRUCTURE AND ITS DISTRIBUTION

### THE RELEVANCE OF FAIRDATA MANAGEMENT, USAGE AND SHARING IN POLICY-MAKING PROCESSES

Welcome and thank you for visiting our survey.

The Horizon 2020 EERAdataproject (<https://www.eeradata.eu/>) develops, explores and tests a FAIR (findable, accessible, interoperable, re-usable) and open data ecosystem in the field of low-carbon energy for a transparent and integrated energy data management with useful metadata information and quality assurance as a basis for the society to choose, monitor and implement sustainable transition pathways. This challenge addresses stakeholders' needs in the rapidly changing energy field, including the availability of relevant data and information.

To meet these aims we are gathering the views and opinions of policy makers and data users and producers on how energy data is found and processed in policies and how it can be improved.

Therefore, we are asking you to fill out the questionnaire. It takes 10 to 15 minutes. The information provided will contribute to improvements of the FAIRification process in the energy community.

The questionnaire can be answered anonymously and all individual responses will be held confidential and secure, for use only by the EERAdataproject. Interested respondents may opt to provide a contact data (email address) to obtain further information on EERAdataproject's ongoing work on data management and its implementation.

#### ABOUT YOU

Some information for statistical purposes

1. What is your age range?

☐ 18-24

☐ 25-34

☐ 35-44

☐ 45-54

☐ Above 55

- The survey included 30 questions (6 open)
- The survey is in the form of a common questionnaire divided into 3 main sections:

SECTION A  
SECTION B  
SECTION C

- Survey distribution: „FIRST ROUND”
  - 9 countries (Poland, Germany, Italy, Spain, Belgium, France, Czech Republic, Slovenia, Greece)
  - 122 entities:
    - 22 enterprises and companies
    - 32 scientific community (research institutes/University/etc.)
    - 68 entities of public administration (local and regional authorities)

[https://forms.office.com/pages/responsepage.aspx?id=TT4ZUe\\_HQ06kJ31-DzUDItSZL2nNqUIPpAI8cX\\_\\_JwJUNT M1MkkzTzRGVzU5VFBZTDJPMUZJTDhEVi4u](https://forms.office.com/pages/responsepage.aspx?id=TT4ZUe_HQ06kJ31-DzUDItSZL2nNqUIPpAI8cX__JwJUNT M1MkkzTzRGVzU5VFBZTDJPMUZJTDhEVi4u)

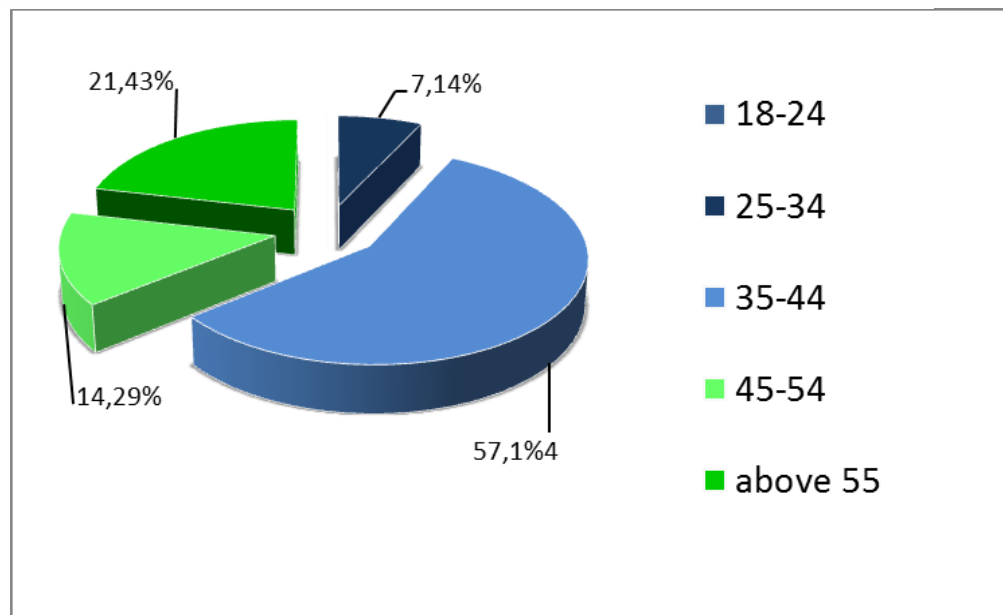
Return of the questionnaires: 14% (with regard to the number of emails sent)



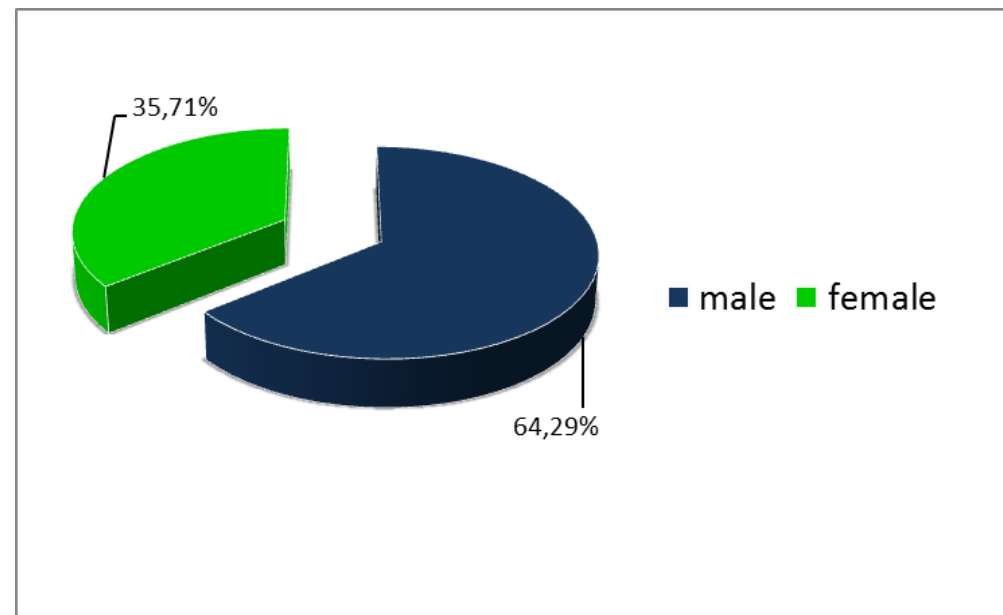
***...about the Respondents***



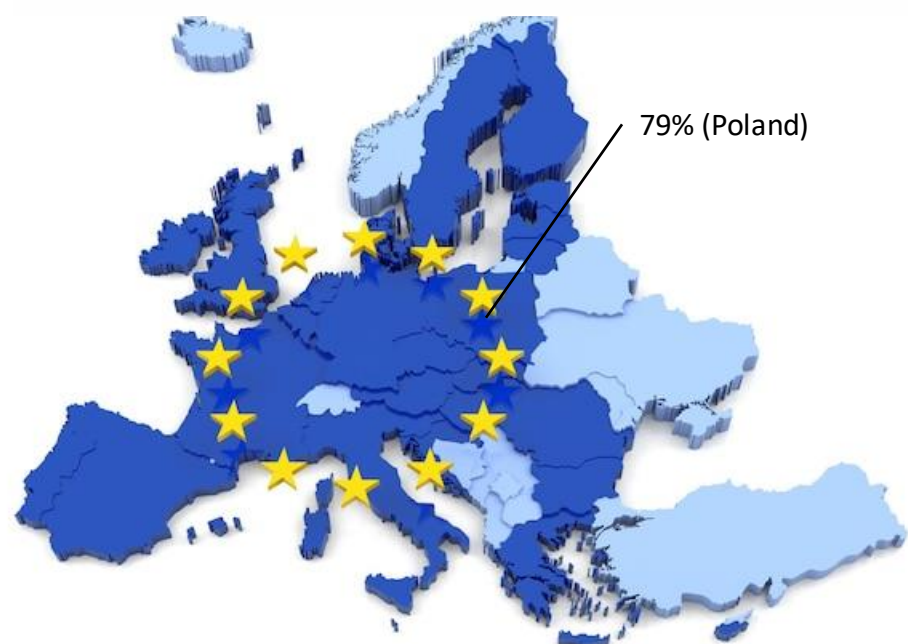
## 1. What is your age range?



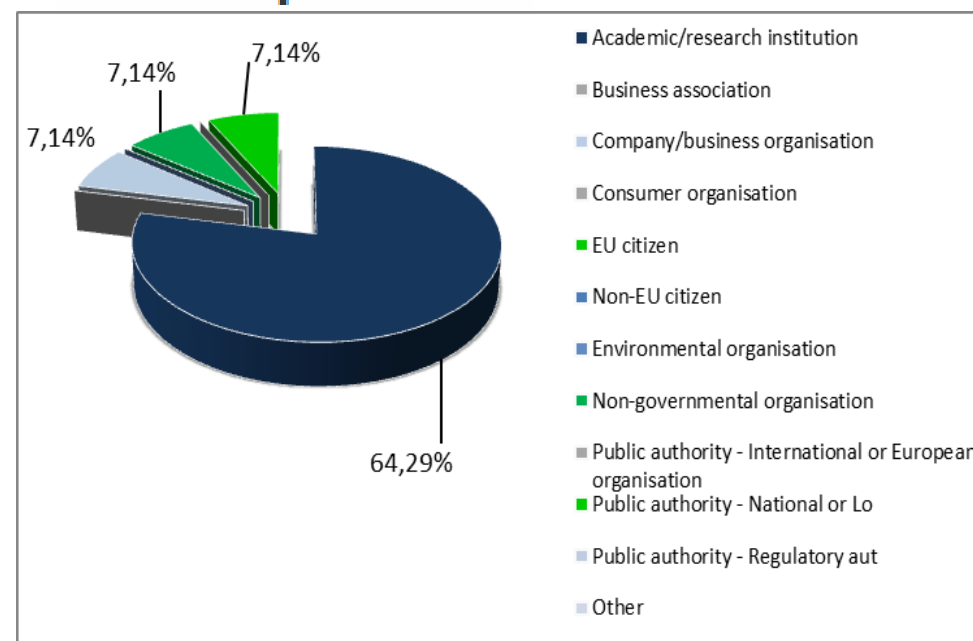
## 2. Which gender do you identify most with?



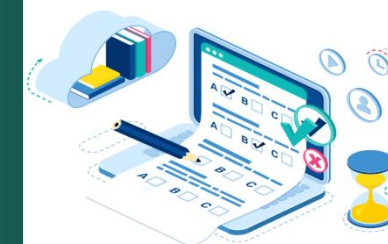
## 3. Country of origin:



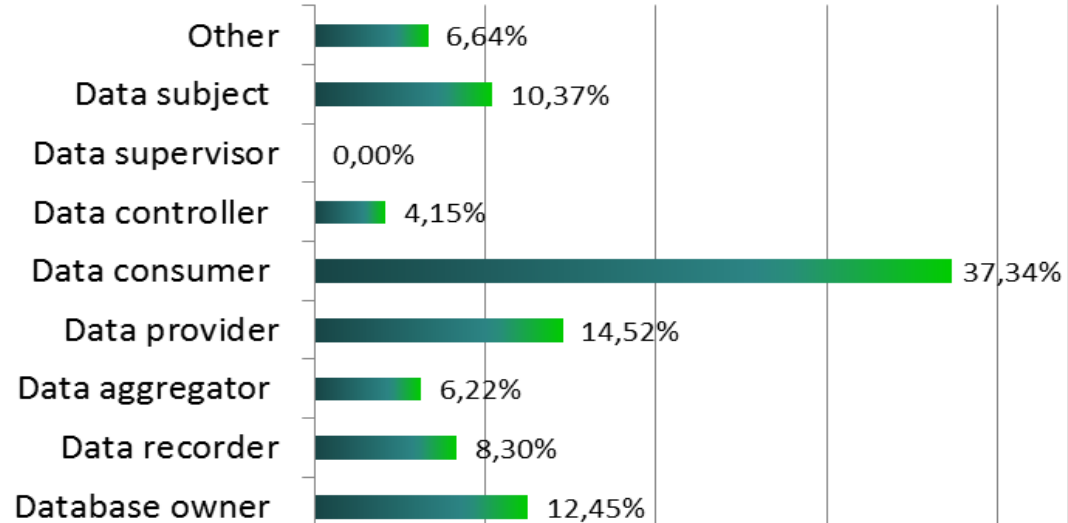
## 4. What kind of organisation do you work for or represent?



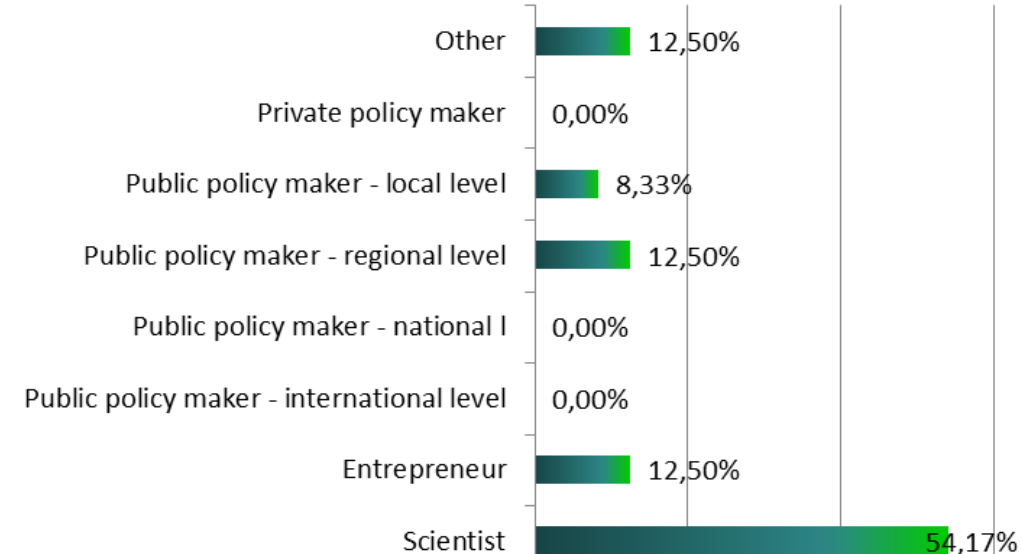




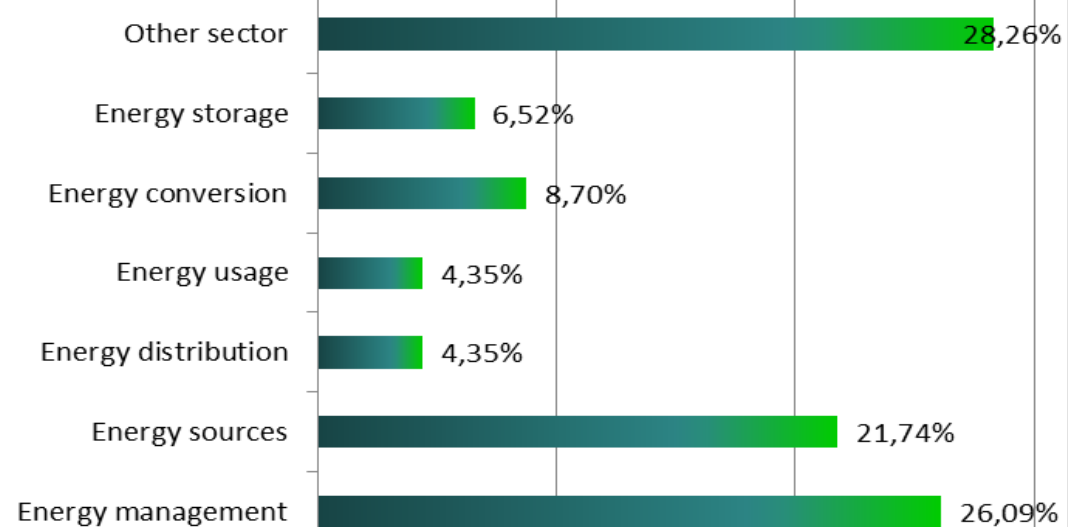
## 5. Which role(s) in data processing do you most identify with?



## 6. What type of data user do you represent?



## 7. What sector(s) do you represent or what is your research/profession connected with?



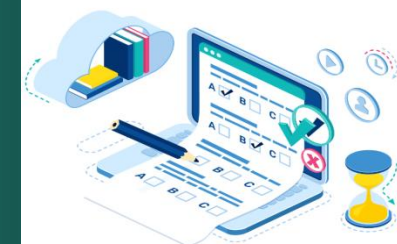
## 8. Additional information regarding respondent metrics

**NO COMMENT**



## SECTION A – Results

### ***Questions concerning respondent's awareness of the FAIR data [Q9-Q12]***



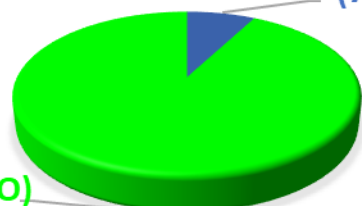
## 9. What is your level of knowledge about FAIR data?

(for more information: <https://www.go-fair.org/fair-principles/>)

I HAVE IMPLEMENTED THE FAIR  
PRINCIPLES OPTIMISING HUMAN  
READABILITY

(7,7% YES)

(92,3% NO)



I HAVE IMPLEMENTED THE FAIR  
PRINCIPLES WITH A FOCUS ON  
MACHINE-ACTIONABILITY

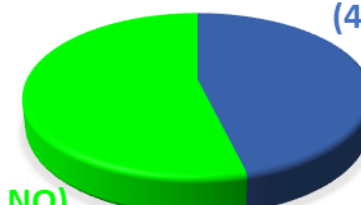
(100% NO)



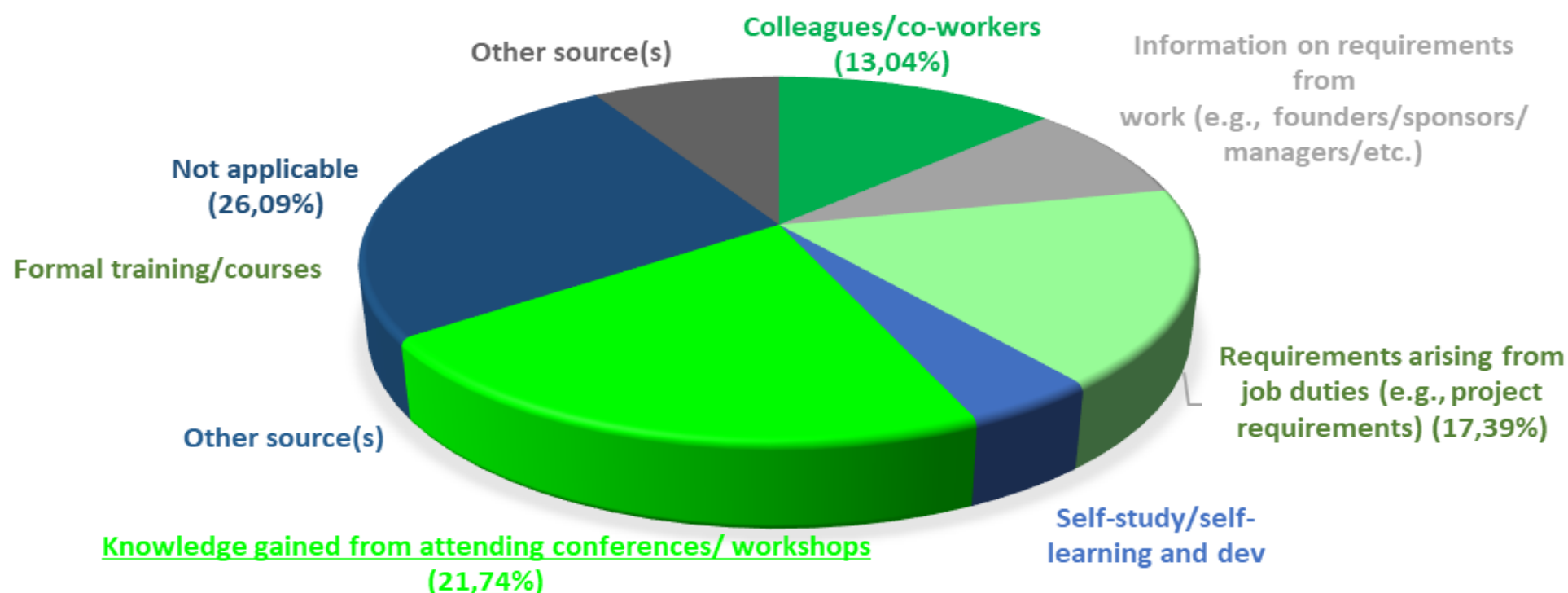
I AM AWARE OF THE DIFFERENCES  
BETWEEN FAIR/OPEN DATA

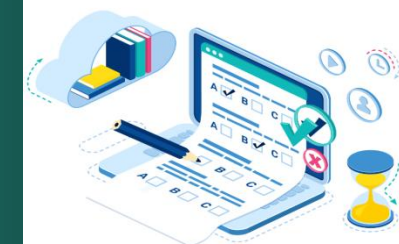
(46,2% YES)

(53,8% NO)



## 10. Mark the main source(s) of information through which you became aware of FAIR data. Please select all that apply. If applicable add any additional source.





## 11. To what extent do you agree with following statements?

■ Strongly disagree   
 ■ Somewhat disagree   
 ■ Neutral   
 ■ Agree   
 ■ Strongly agree   
 ■ No opinion

FAIR is well implemented at the EU level

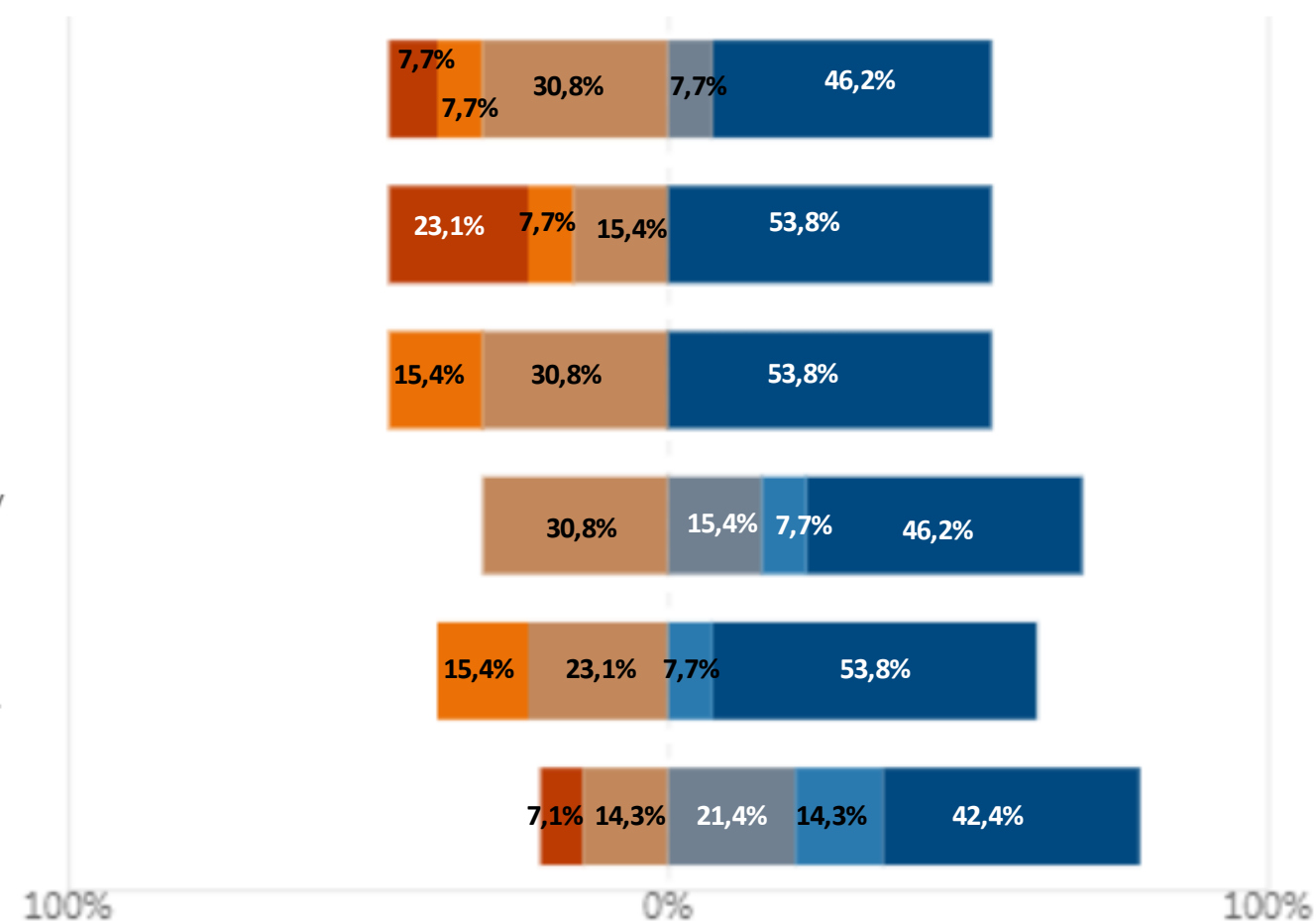
FAIR is well implemented at the national level (*refers to the country represented by the respondent*)

Established EU policies are based on FAIR data (*i.e., developed strategic and planning documents in the...*)

Making data fully FAIR is out of scope for the majority of data users and policy makers (*e.g., lacking...*)

Good support and a rich portfolio of tools is available for supporting the FAIRification of data, in the conte...

It's necessary to introduce guidelines into all EU financial programs recommending/obligating...





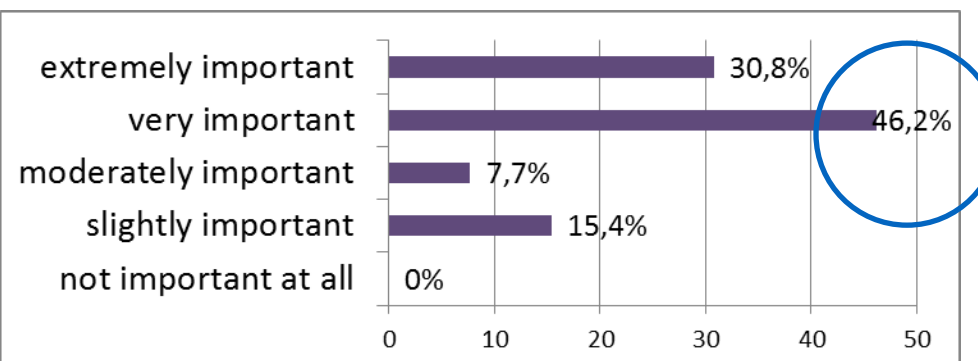


## 12. Rank the individual attributes defining FAIR data according to your preference

**F**

### Findable

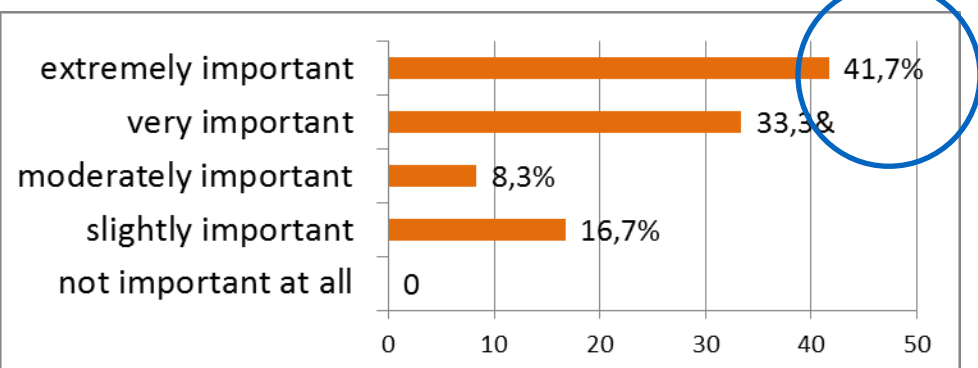
I can find my complete  
Antha generated data  
and metadata through  
identity linked searches



**A**

### Accessible

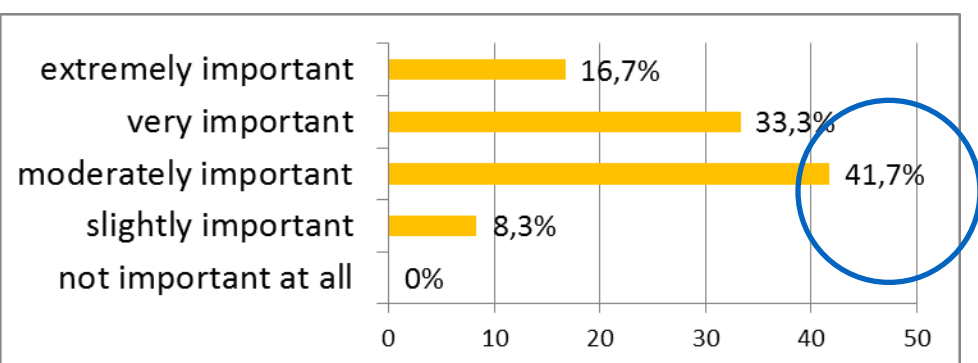
I can reach all my  
records through  
web-based user  
interfaces or API



**I**

### Interoperable

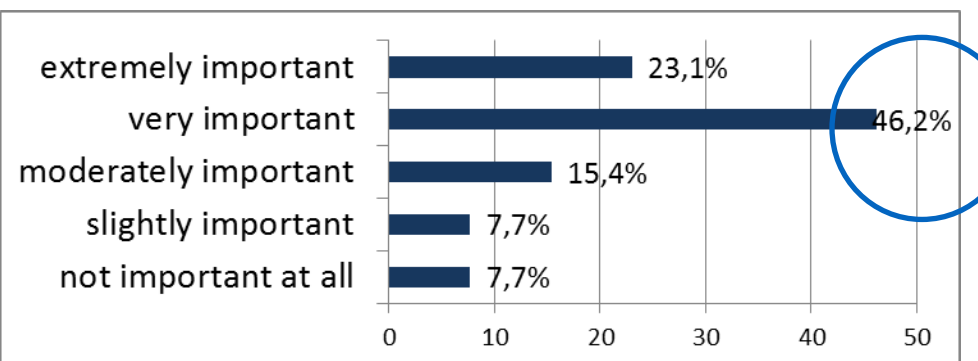
I have a singular  
language for all my  
systems and can utilize  
industry standards

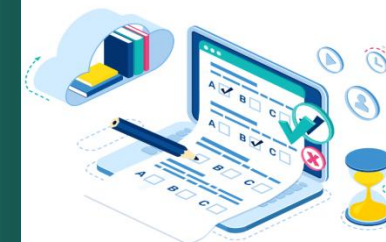


**R**

### Reusable

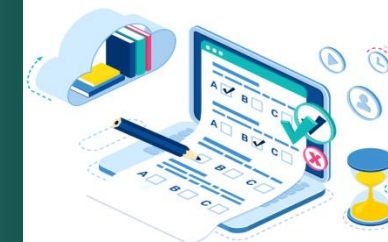
I have a complete record  
of the experiment design  
linked to my data for  
true reusability and  
transferability



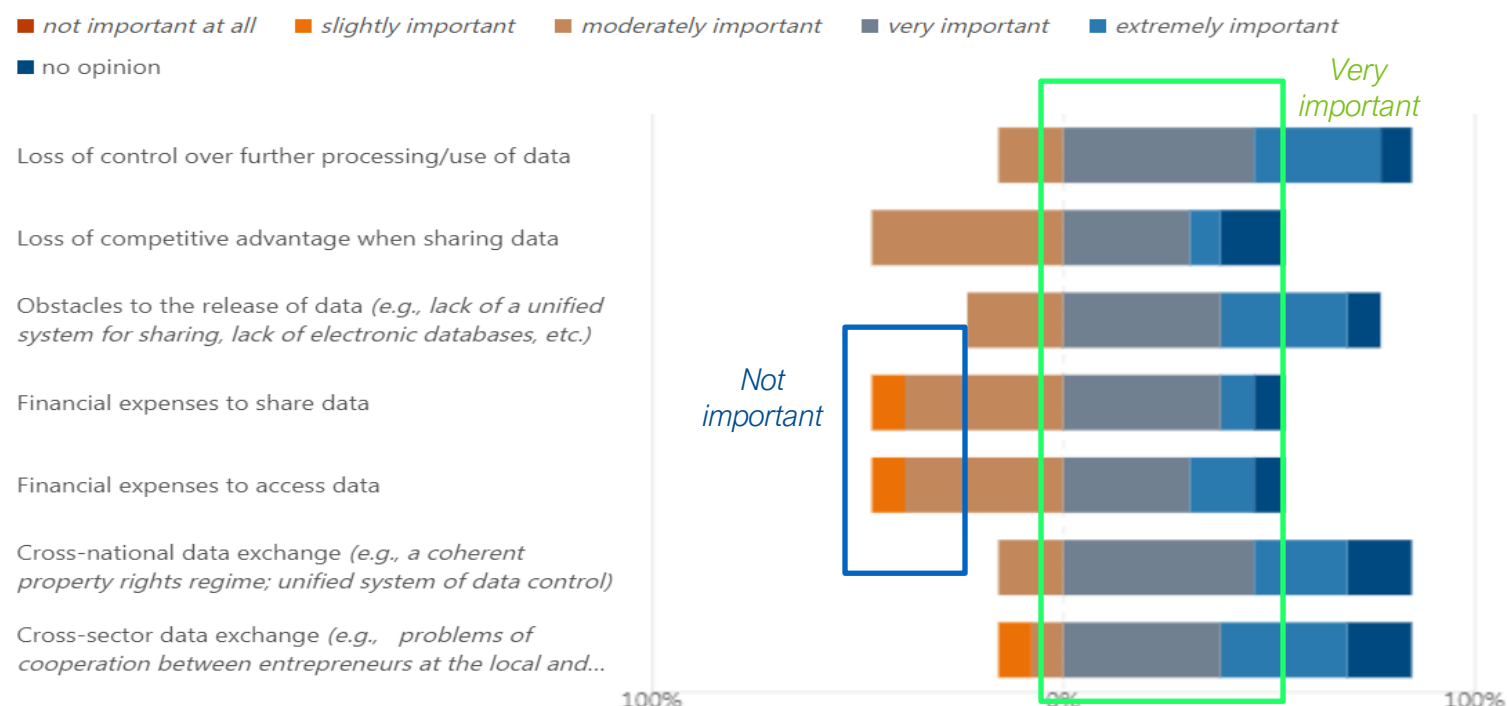


## SECTION B – Results

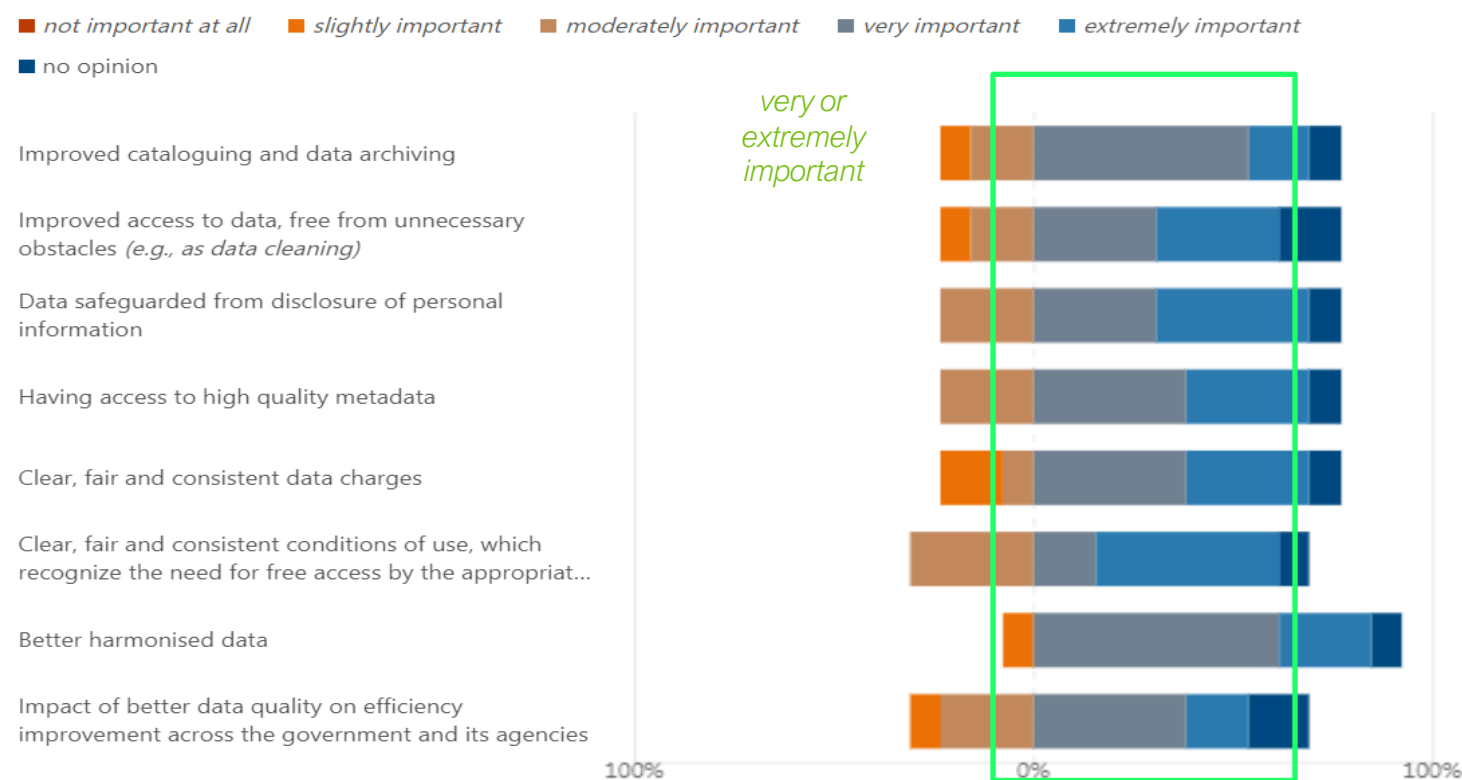
### ***Questions concerning data management, sharing and exchange [Q13-Q19]***



## 13. Rank the relevance of the following issues related to data sharing according to your preference



## 14. Rank the importance of usage-related FAIR data aspects according to your preference





## 15. To what extent are the following issues barriers or impediments to applying good data management practices of FAIR to enhance accessibility, data sharing and data re-use?

■ not a barrier ■ minor barrier ■ considerable barrier ■ major barrier ■ complete barrier ■ no opinion

Lack of understanding of the FAIR data concept and FAIR data guiding principles

Lack of information on the FAIR data guiding principles

Lack of the necessary skills or training

Lack of resources required to make data FAIR compliant

Lack of available methods/tools to test datasets/databases to enable FAIR data

Lack of time needed to make data FAIR compliant

Data security issue (e.g. the possibility of inappropriate use or exploitation of the data by disorderly or unauthoriz...

Confidentiality and privacy concerns around the data

Issues related to proper citation and recognition of the original data

Insufficient understanding and acceptance of big data

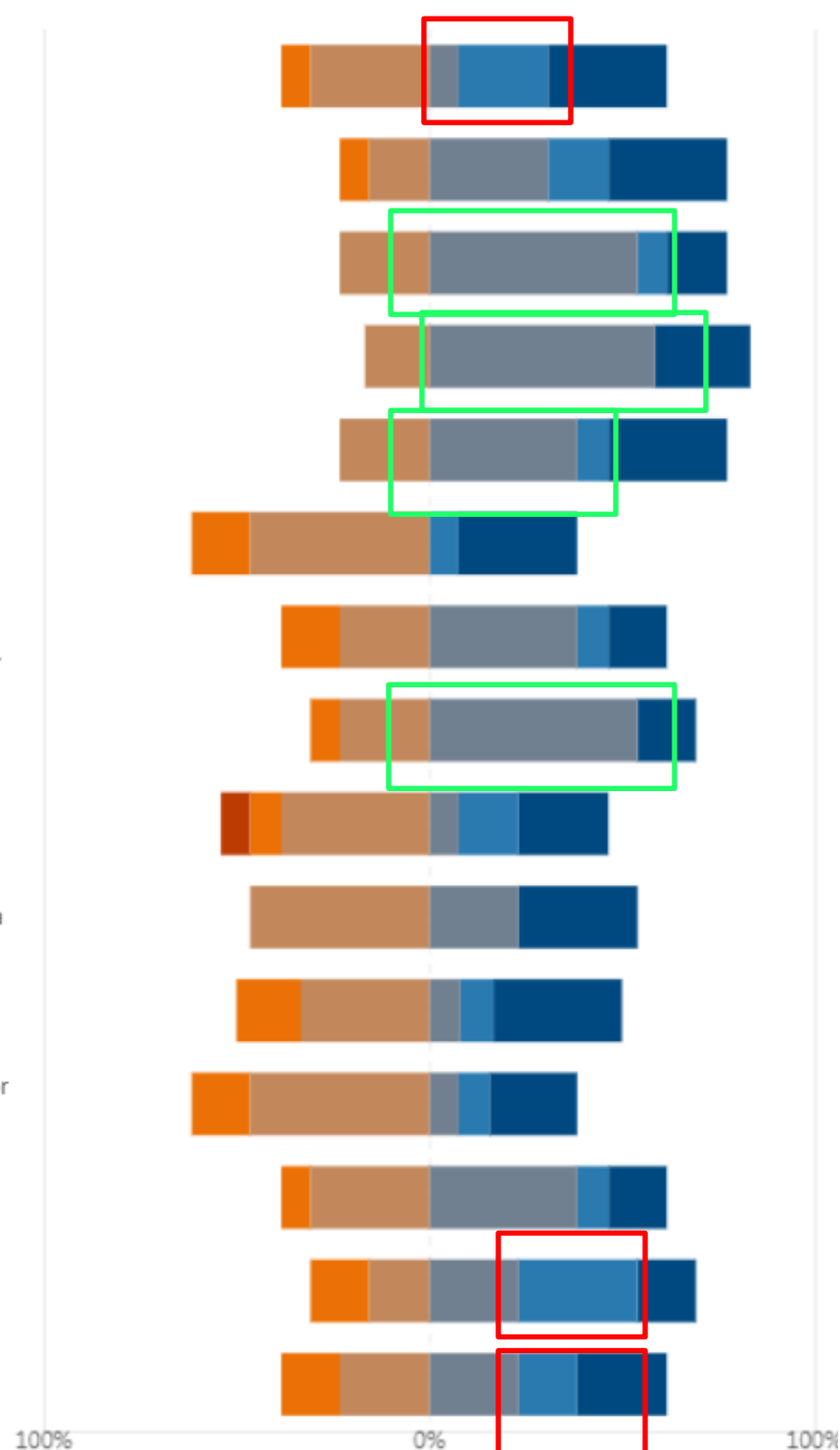
Insufficient understanding and acceptance of metadata

Costs related to the maintenance of databases and/ or access to them (hardware, software, cloud solution)

Complexity of managing data quality

Difficult data analytics due to different data formats

Difficult data analytics due to different understanding of data (related to language barriers, difference in...







16. Do you identify any other issues are barriers or impediments to applying good data management practices of FAIR, to enhance accessibility, data sharing and data re-use?



RESPONDENTS



I  
Don't  
Know

17. Rank the importance of each of the potential benefits related to the use of FAIR data according to your preference

■ not important at all   ■ slightly important   ■ moderately important   ■ very important   ■ extremely important  
■ no opinion

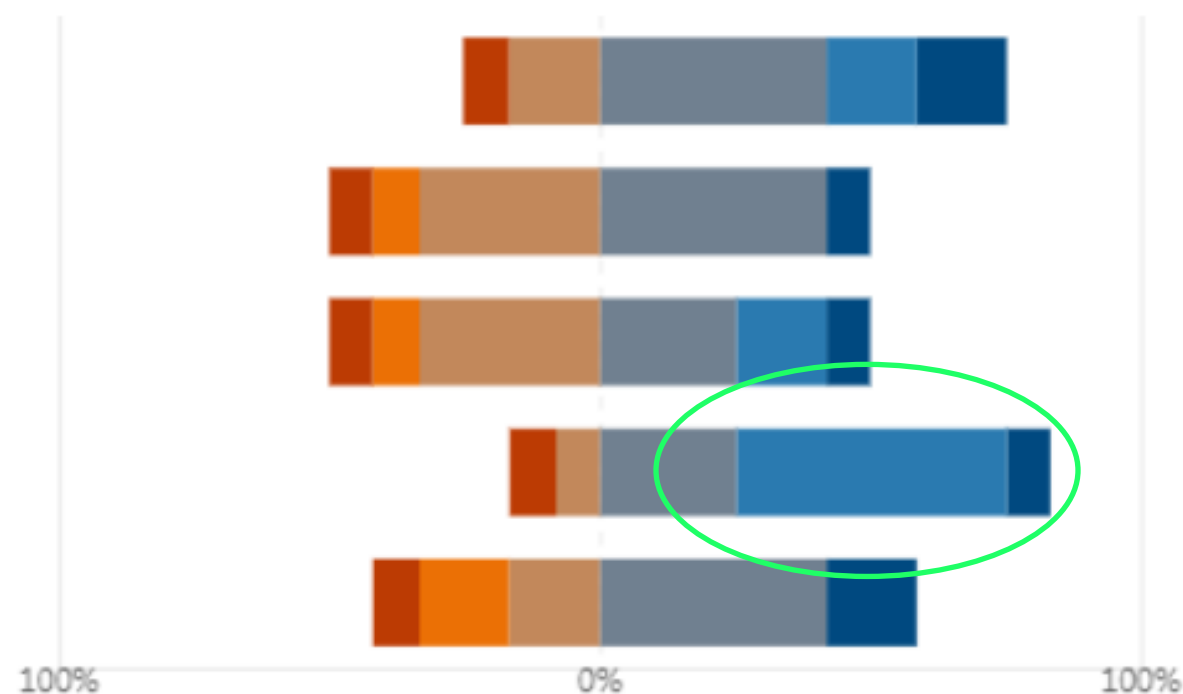
Maximise the effects of data processing work

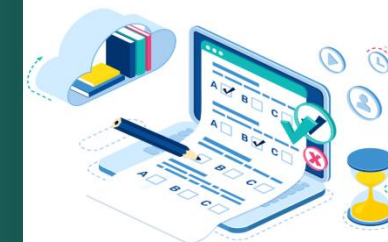
Increase in recognition of the entity/institution through citation

Opportunities for new collaborations

Access to reliable source data information

Reciprocal data sharing

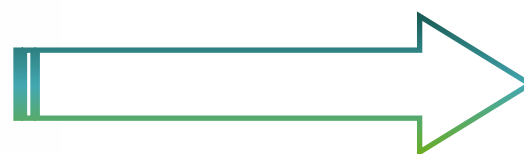




18. Do you identify other potential benefits related to the use of FAIR data by policymaking?

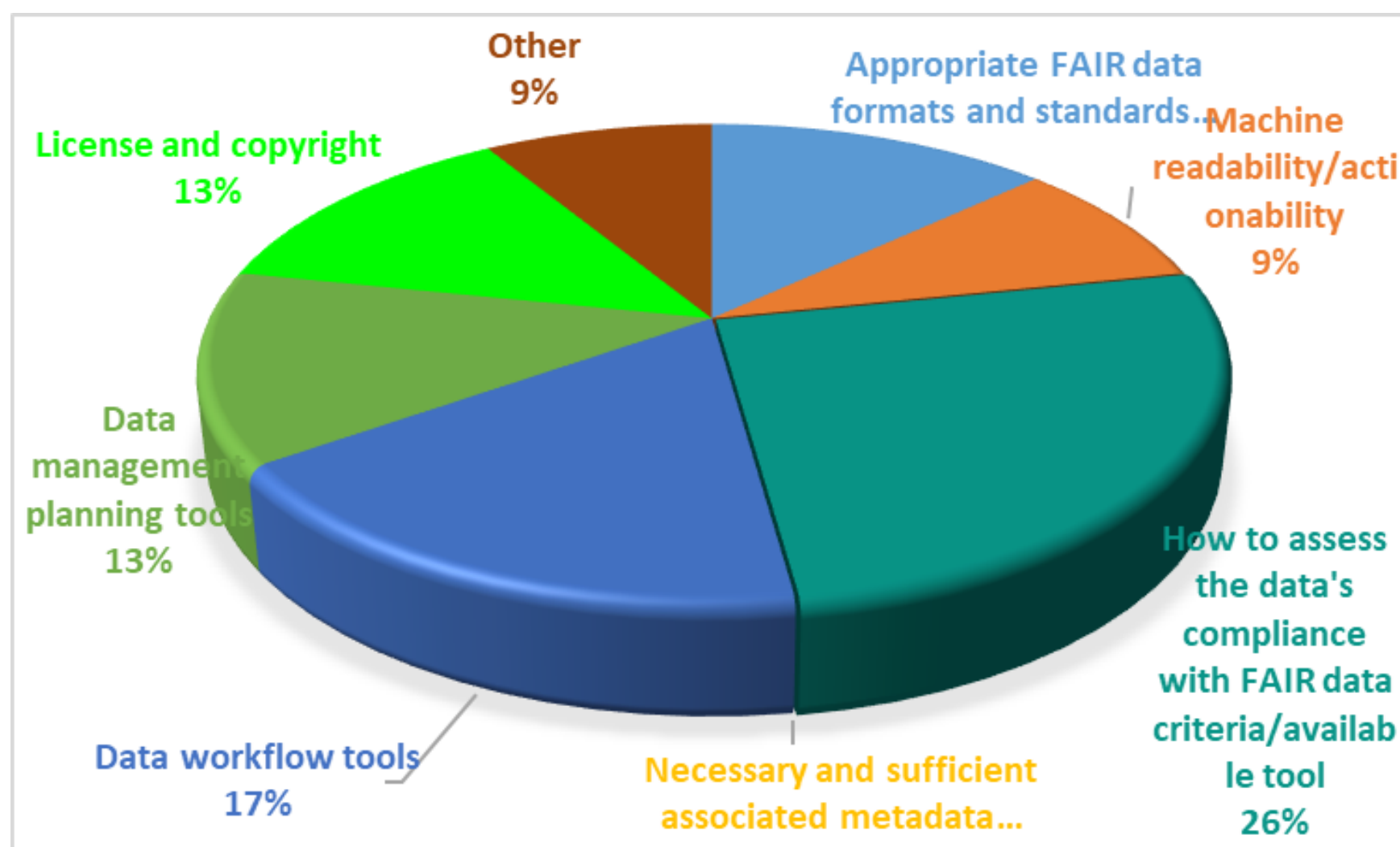


open question



*“I don't know”*

19. Which of the following aspects related to FAIR data would you like to learn more about?



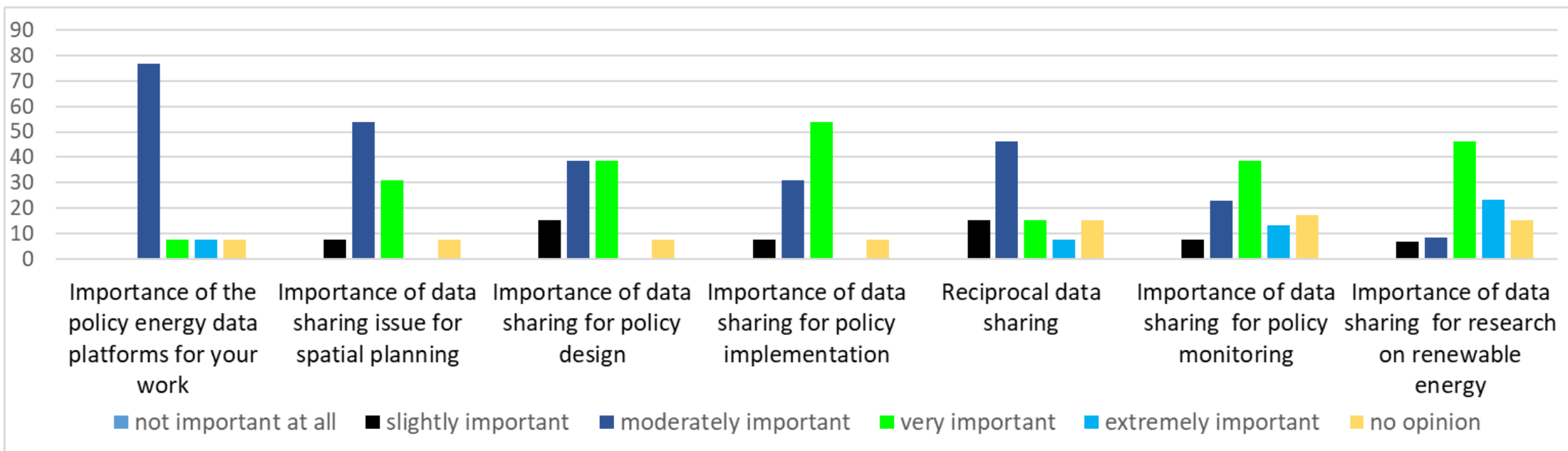


## SECTION C – Results

### ***Questions concerning the use of FAIR data in polycymaking [Q20-Q29]***

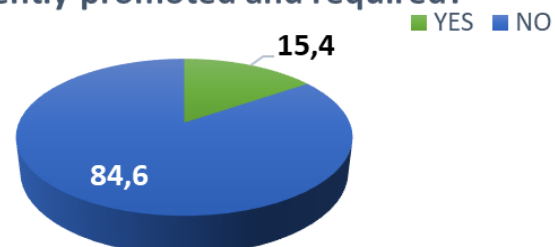


## 20. Please rank the relevance of the following statements according to your preferences.

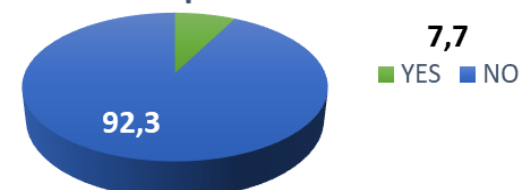


## 21. Please answer the following questions.

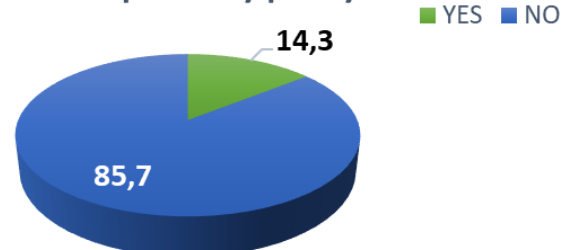
Is the use of standards for shared data is sufficiently promoted and required?



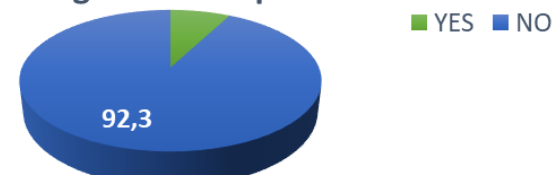
Do decision-makers sufficiently and clearly communicate intentions regarding the role, purpose and scope of data to be...



Is machine-readability sufficiently promoted and required by policymakers?



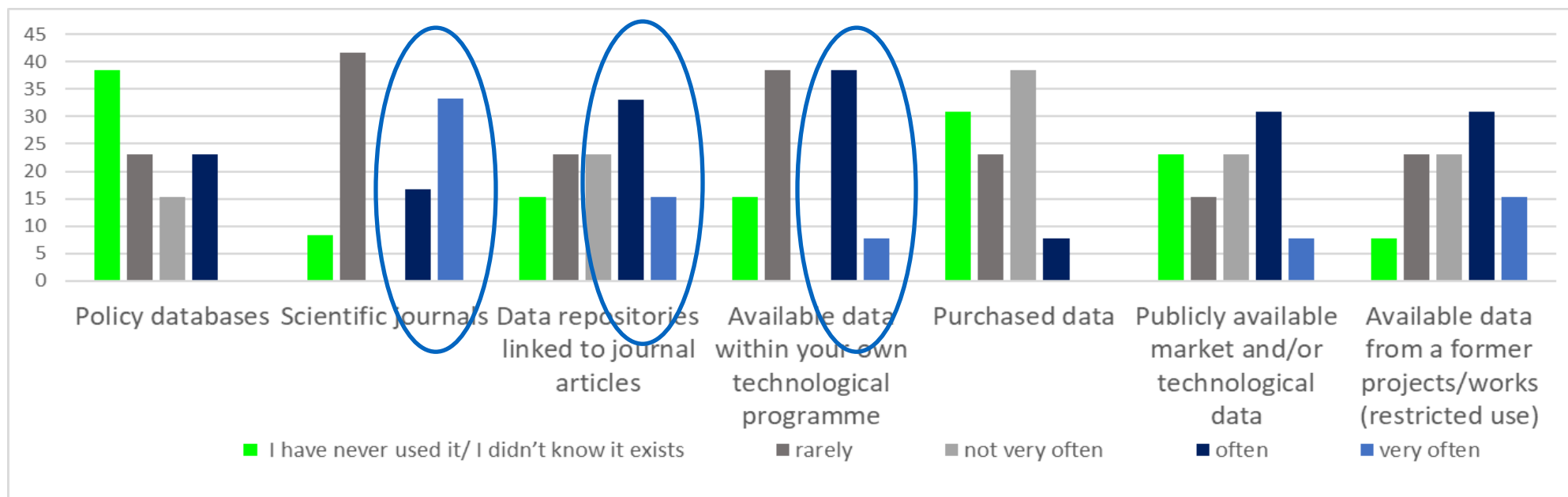
Is the incentive system used by policymakers to encourage the adoption and use of open and standardised data when drafting new data policies...



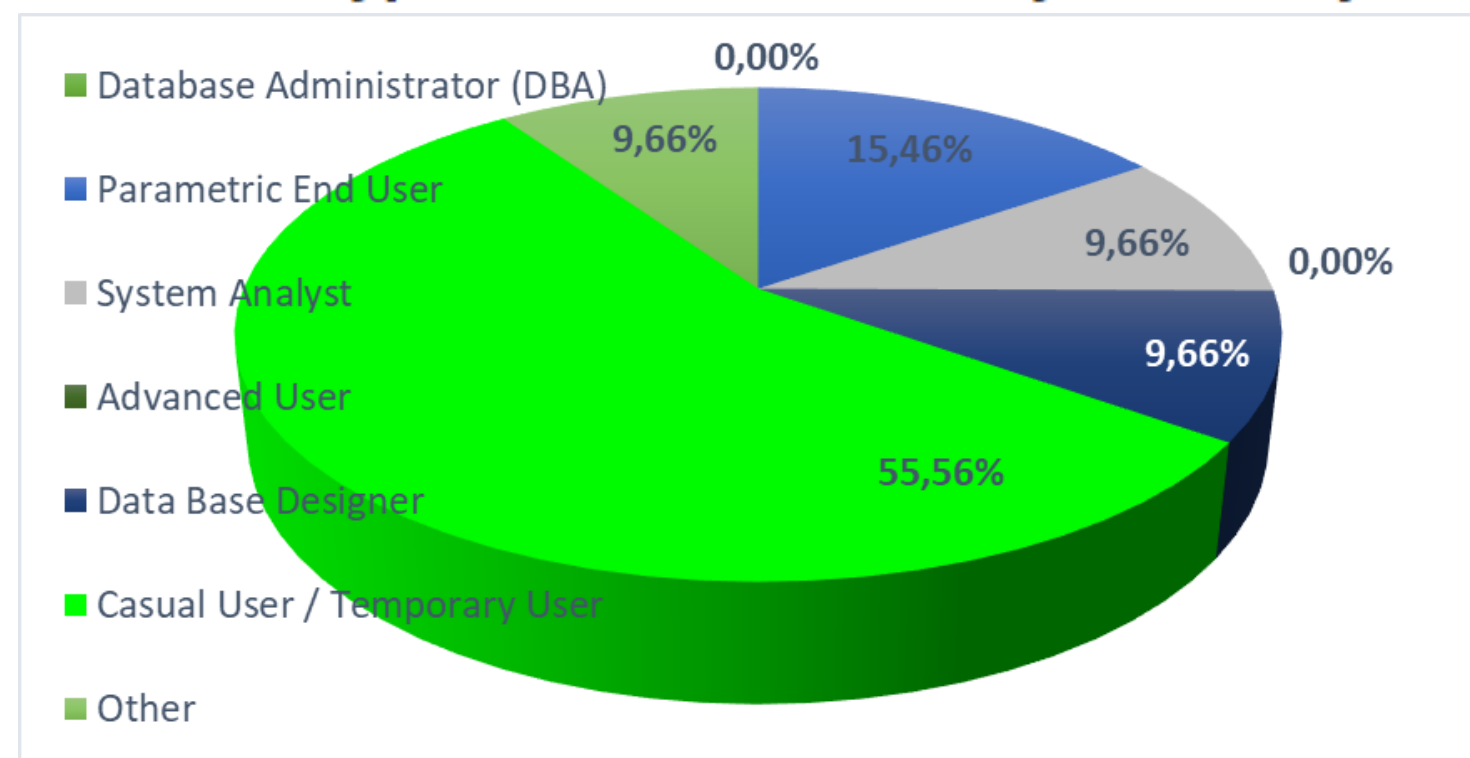




## 22. How often do you use each of the indicated data sources?

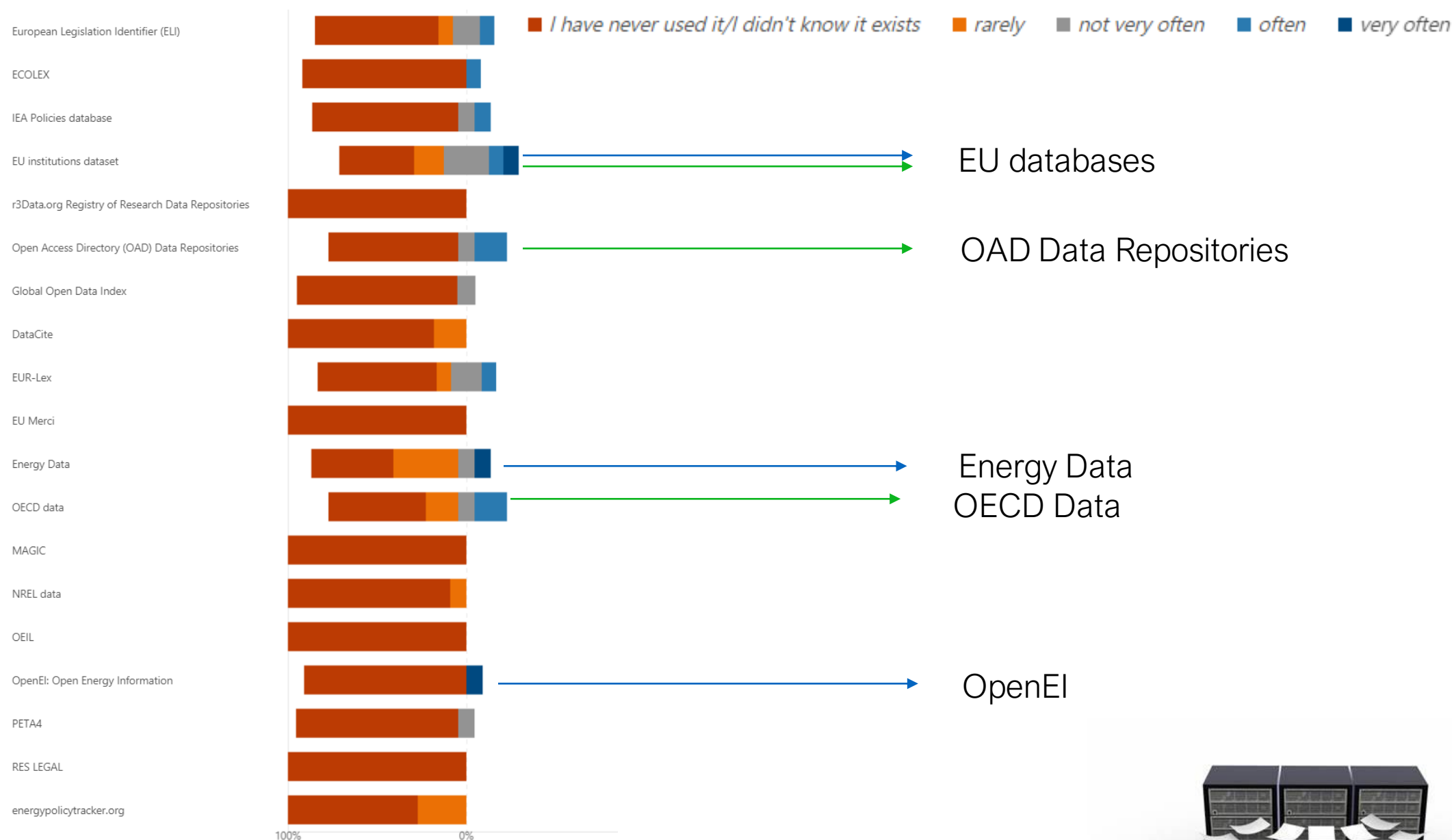


## 23. Which type of database user do you identify with?





## 24. How often do you use each of the indicated data sources?

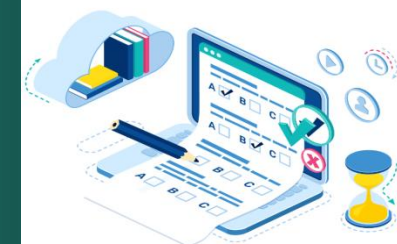


## 25. Please specify other databases you use (if applicable)

2 databases

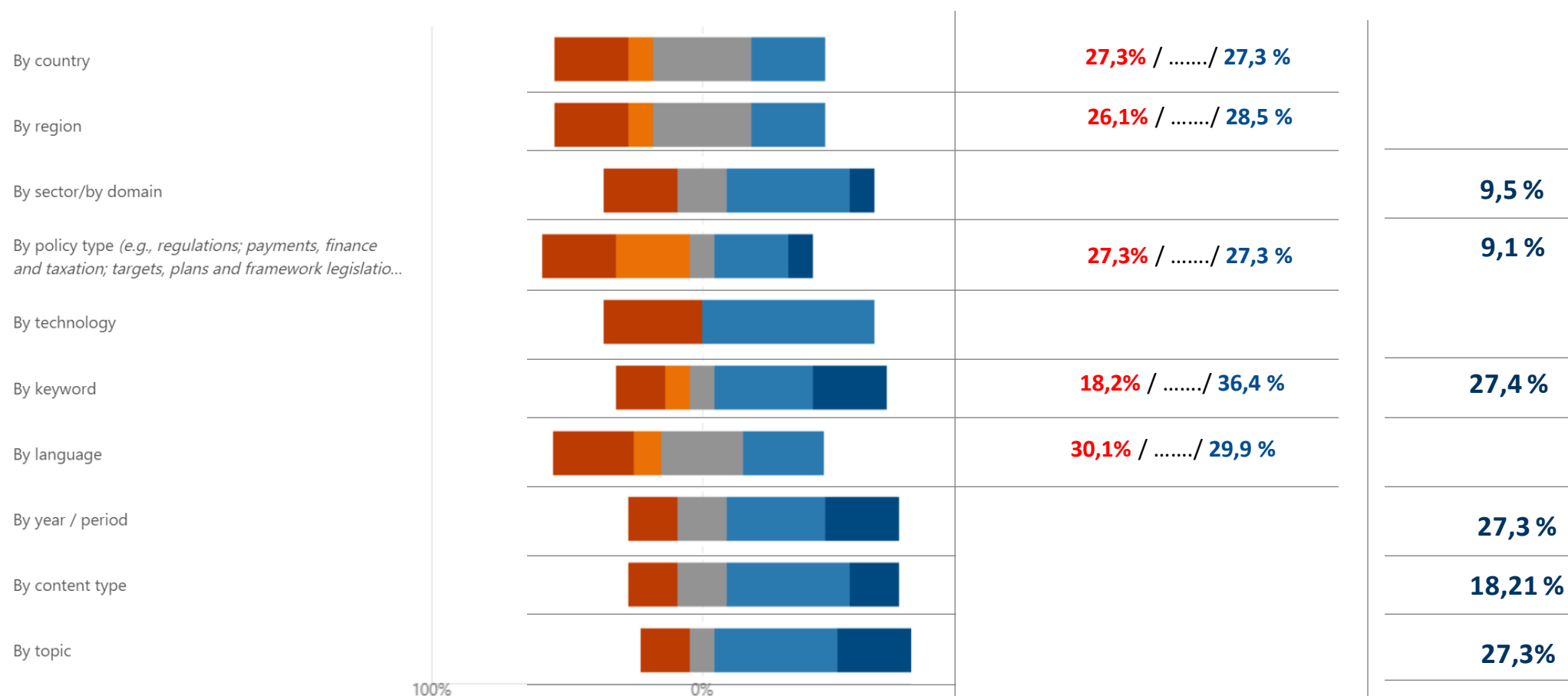
(concerning emissions from local heating systems in buildings)



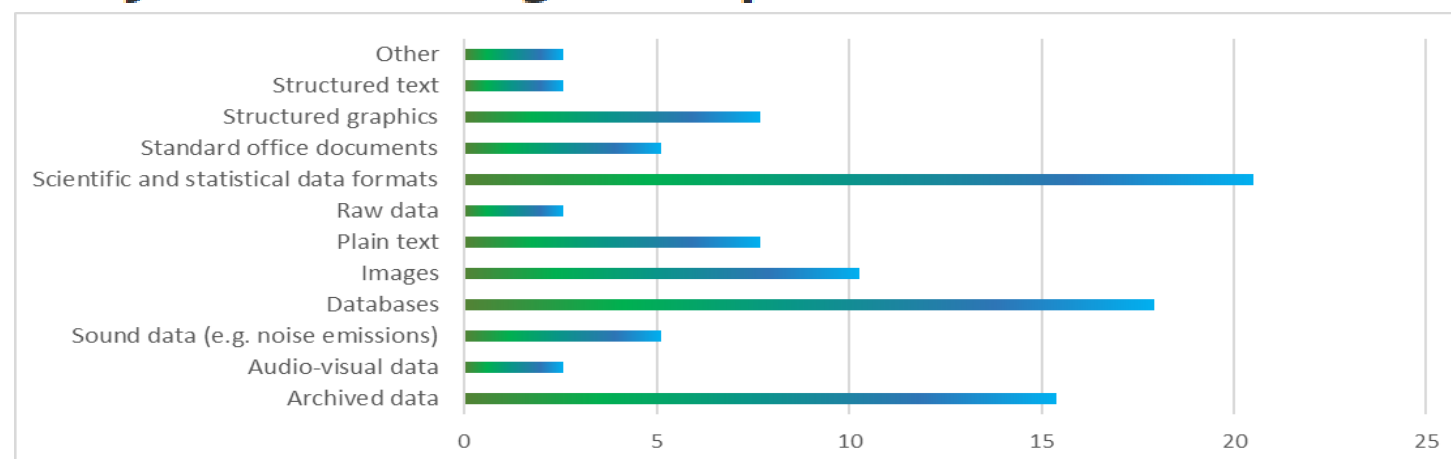


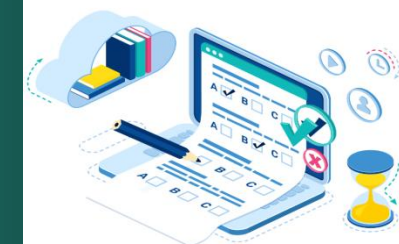
## 26. How often do you use each of the following types of filters when searching policymaking databases?

■ I have never used / I don't know the existence of it ■ rarely ■ not very often ■ often ■ very often

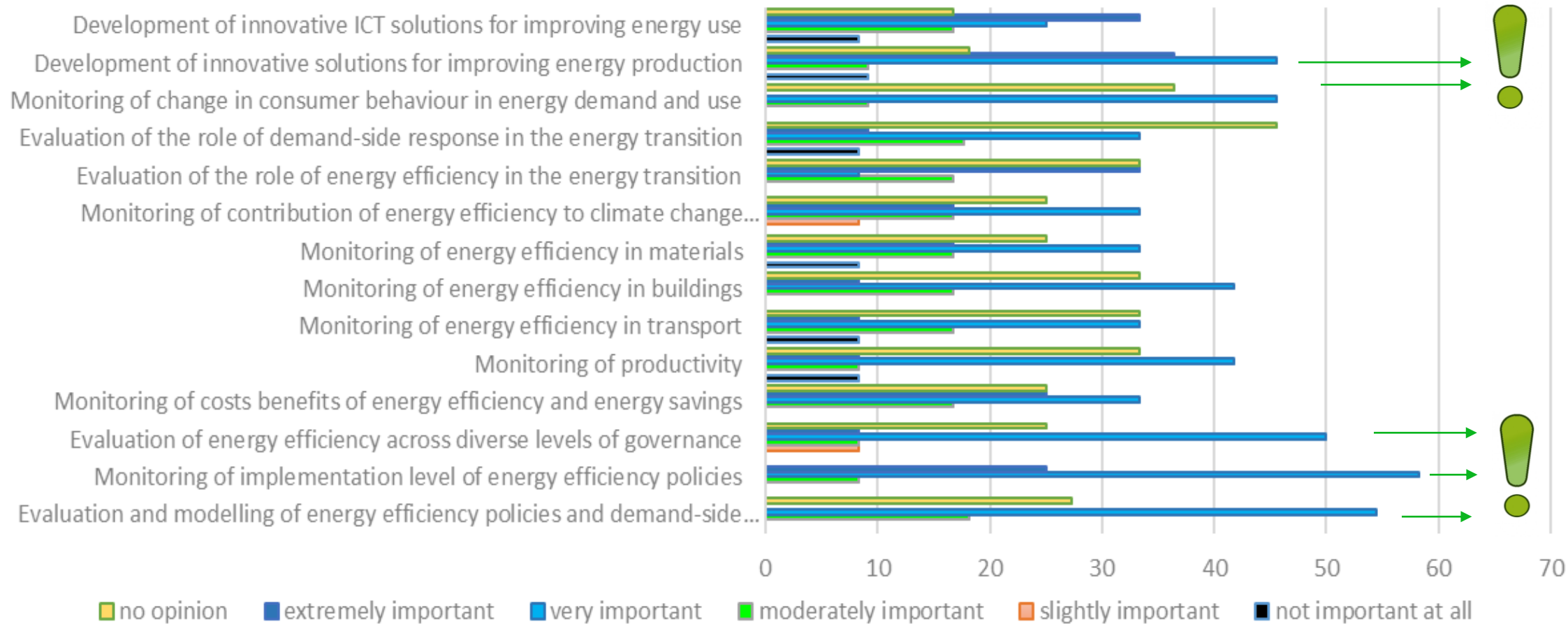


## 27. Check which kind(s) of data you are looking for in policies and documents





## 28. Rank the importance of data usage under specific energy sector processes/activities according to your preference







All of the individual attributes defining FAIR data were indicated as very or extremely important factors.



The financial issues are not a problem in the process of managing, processing and data sharing - as a one of the barrier the lack of rules regulating the flow of data and ensuring its protection was indicated.



The incentive system used by policymakers to encourage the adoption and use of open and standardised data when drafting new data policies is not sufficient (92,3%).



The use of standards for shared data is not sufficiently promoted and required (84,6%).



The machine –readability is not sufficiently promoted and required by policymakers (85,76%).





As a most important benefit of using FAIR data an access to reliable sources of information were appointed.



The primary (*well known*) barrier is lack of knowledge and consequently, if is something is unknown in the community it cannot be implemented or applied correctly.



„*Lack of understanding of the FAIR data concept (1), difficult data analytics due to different data formats (2) and different understanding of data (3)*” were identified as an important barriers / impediments to applying good data management practices of FAIR.



The results prove the important role played by international projects, meetings and workshops in transferring knowledge of FAIRdata and promoting attitudes and actions conducive to the FAIRification process.





Reliable and accessible data are required and used not only at the stage of policy making but throughout the whole monitoring process evaluating progress of their implementation. More reliable and accessible data allows constant monitoring over the processes / activities/ actions, and allows to catching deviations and taking quick remedial actions.





*Thank you for your attention*



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ECOSYSTEM IN THE LOW-CARBON  
ENERGY RESEARCH COMMUNITY

I NEED SOME DATA  
FROM AN UNREACHABLE  
GUY NAMED ED. WHAT  
SHOULD I DO?



www.dilbert.com scottadams@aol.com

JUST MAKE UP A  
BUNCH OF DATA  
LIKE EVERYONE  
ELSE DOES.



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EVERY—  
ONE ELSE  
DOES  
THAT?



ARE YOU  
DOUBTING  
MY DATA?

